

CLAIMS

1. A fuel cell device, comprising a fuel cell unit including at least two fuel cell elements which are coupled with one another in a way selected from the group consisting of a series coupling, a parallel coupling, and both, for conversion of chemical energy into an electrical energy; and an electronic control unit for controlling individual fuel cell elements of said fuel cell unit.

2. A fuel cell device as defined in claim 1, wherein said electronic control unit includes at least one control element for controlling material streams of individual ones of said fuel cell elements.

3. A fuel cell device as defined in claim 2, wherein said control element is arranged between two of said fuel cell elements.

4. A fuel cell device as defined in claim 1, wherein said control element is formed as a control valve.

5. A fuel cell device as defined in claim 1, wherein at least two of said fuel cell elements are provided with different, maximum electrical powers.

6. A fuel cell device as defined in claim 1, wherein at least two of said fuel cell elements are provided with different catalytic coatings.

7. A fuel cell device as defined in claim 6, wherein said at least two fuel cell elements have at least different quantities of the catalytic coatings.

8. A fuel cell device as defined in claim 1; and further comprising at least one pressure generating unit for generating at least two different operational pressures.

9. A fuel cell device as defined in claim 8, wherein said pressure generating unit includes a high pressure generating element and a low pressure generating element.

10. A fuel cell device as defined in claim 1, wherein said fuel cell unit is formed so as to provide an operation for supplying current.

11. A fuel cell device as defined in claim 1, wherein said fuel cell unit is formed so as to provide an operation for supplying heat.

12. A vehicle, comprising a vehicle part; and a fuel cell device, said fuel cell device including a fuel cell unit having at least two fuel cell elements which are coupled with one another in a way selected from the group consisting of a series coupling, a parallel coupling, and both, for conversion of chemical energy into an electrical energy; and an electronic control unit for controlling individual fuel cell elements of said fuel cell unit.

13. A method of operating of a fuel cell device, comprising the steps of providing a fuel cell unit having at least two fuel cell elements for conversion of the chemical energy into electrical energy; coupling said at least two fuel cell elements by a connection selected from the group consisting of a serial connection, a parallel connection, and both; and controlling said fuel cell unit by an electronic control unit which controls individual ones of said fuel cell elements.